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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,000	02/25/2004	Florian Tauser	TAUSER ET AL. - 1	3926

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WILLIAM COLLARD
COLLARD & ROE, P.C.
1077 NORTHERN BOULEVARD
ROSLYN, NY 11576

EXAMINER

DIACOU, ARI M

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/787,000		TAUSER ET AL.	
	Examiner		Art Unit	
	Ari M. Diacou		3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The applicant makes the following arguments:
 - A. On pages 10-11, that the objection to the specification is based on an incorrect assumption about what the applicant means by "negative group velocity dispersion"
 - B. On pages 11-12, that the claims have been amended to overcome the rejection under 35 USC 112, second paragraph.
 - C. On pages 12-14, that Galvanauskas does not meet the limitations of claim 1 because it does not self-phase modulate and therefore does not have a self-broadening spectrum.
 - D. On pages 14-15, that the present invention is further defined over Galvanauskas, because of differences in the steps taken to change the width and height of the gain spectrum.
2. In response:
 - A is convincing, the objection is hereby withdrawn.
 - B is convincing, the rejection is hereby withdrawn.
 - C is unconvincing because Agrawal teaches that self-phase modulation inherently broadens the spectrum of any signal above a certain power. See the rejection below.
 - D is unconvincing because the alleged differences are not claimed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Galvanauskas et al. (USP No. 5847863).

- Regarding claim 1, Galvanauskas discloses a device for amplifying light pulses comprising:
 - (a) a pulsed laser light source for producing light pulses having an optical spectrum; [Fig. 1a, #10] [Col. 4, lines 18-32]
 - (b) an optical stretcher *for temporally stretching the light pulses of said pulsed laser light source*; and [Fig. 1a, #20] [Col. 4, lines 18-32]
 - (c) an optically pumped amplifier fiber *for amplifying and temporally compressing the light pulses*; [Fig. 1a, #30] [Col. 4, lines 18-32]
 - wherein said amplifier fiber has a positive group velocity dispersion *and non-linear optical properties so that the optical spectrum of the light pulses is broadened during amplification of the light pulses by taking advantage of non-linear self-phase modulation*. [As explicitly taught by the wikipedia

references, these properties are merely those of silica with normal dispersion characteristics.] [On pages 62-63 Agrawal teaches how to calculate the signal power at which cross-phase modulation is not a problem, and he says that it is an inherent property of the propagation medium.]

- Regarding claim 2, Galvanauskas discloses the device according to claim 1, wherein said optical stretcher precedes said amplifier fiber. [Fig. 1a] [Col. 4, lines 18-32]
- Regarding claim 3, Galvanauskas discloses the device according to claim 2, wherein said optical stretcher comprises an optical fiber having a negative group velocity dispersion. [Col. 4, lines 1-17]
- Regarding claim 5, Galvanauskas discloses the device according to claim 1, wherein amplified light pulses from said amplifier fiber pass to an optical compressor *for further temporal compression*. [Fig. 1a, #40] [Col. 4, lines 18-32]
- Regarding claim 6, Galvanauskas discloses the device according to claim 1, further comprising at least one laser diode for optical pumping of said amplifier fiber. [Inherent, when an application discloses a triangle symbol in a schematic and marks it as an optical amplifier, it is understood in the art that a pump source and gain medium are included in the structure associated with that symbol. Laser diodes are the most common pumping mechanisms for optical amplifiers]

5. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

6. The italicized clauses are essentially method limitations or statements or intended or desired use and are being examined as if the apparatus were capable of performing the functions described in said clauses. The applicant is claiming an apparatus, not a method or process. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galvanauskas as applied to claim 1 above. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the input

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pulse amplitude suggested by Galvanauskas to achieve a desired result. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

11. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galvanauskas as applied to claims 1-6 above, and further in view of Richardson et al. (USP No. 2003/0156605). Galvanauskas discloses the invention with all the limitations of claim 1, but fails to disclose an interferometer. Richardson teaches the use of an interferometer in a pulsed laser amplifier [Fig. 2, #52]. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to place an interferometer in a CPA, for the advantage of noise filtering.

Conclusion

12. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

13. The references made herein are done so for the convenience of the applicant. They are in no way intended to be limiting. The prior art should be considered in its entirety.

14. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMD 5/7/2006


JACK KEITH
SUPERVISORY PATENT EXAMINER